

Abstract

A freely rotatable micromechanical plate is achieved by employing at least three rotatable plates that are each suspended from a substrate via respective springs, and are coupled via other respective springs to at least three moveable plate attachment points, so 5 that rotation of the rotatable plates about an axis transfers motion to the moveable plate attachment points. Respective posts couple the movement of each respective moveable plate attachment point to a moveable plate. In operation, the rotatable plates may be individually rotated, and the resulting motion of each rotatable plate is passed to its respective moveable plate attachment point. The combined motion of the moveable plate 10 attachment points is passed to the moveable plate via the posts. Using proper control, the plate may be made to tip, tilt and piston. Advantageously, the piston motion may achieve a high vertical movement frequency response.